

WHAT IS CLAIMED IS:

- 1 1. A restraint anchorage for a child safety seat for an automotive
2 vehicle comprising:
3 a cross member;
4 at least two mounting brackets attached to said cross member for
5 securing said cross member to the vehicle at a location behind the seat of the
6 vehicle; and
7 at least one pair of latch wires, each latch wire of said pair of latch
8 wires having a pair of spatially separated legs joined at one end by a transverse latch
9 bar to which the child safety seat can be attached, each leg having a tapered portion
10 and an end portion opposite said transverse latch bar, the tapered portion having a
11 base and a continuously expanding diameter which expands from a diameter similar
12 to said transverse latch bar to a larger diameter at the base of the tapered portion to
13 provide greater strength and rigidity to each latch wire under load.
- 1 2. The restraint anchorage of claim 1 wherein said end portion
2 of each leg passes through holes provided in the cross member.
- 1 3. The restraint anchorage of claim 2 wherein the latch wire
2 further comprises a first collar disposed between said tapered portion and said end
3 portion of each leg, the first collar limiting the length of said legs protruding
4 through the holes provided in the cross member.
- 1 4. The restraint anchorage of claim 3 wherein the latch wire
2 further comprises a second collar engaging a surface of the cross member on a side
3 opposite the first collar to secure the latch wire to the cross member and to prevent
4 it from being disengaged from the cross member by a force applied to said
5 transverse latch bar.
- 1 5. A latch wire for a child safety restraint system retained by a
2 cross member mounted to a vehicle behind a seat, the latch wire comprising:
3 a transverse latch bar; and

4 a pair of spatially separated legs joined at one end by said transverse
5 latch bar, each leg having a tapered portion and an end portion opposite said
6 transverse latch bar, the tapered portion having a base and a continuously expanding
7 diameter which expands from a diameter similar to said transverse latch bar to a
8 larger diameter at the base of the tapered portion to provide greater strength and
9 rigidity to each latch wire under load, the end portion exposed for retention by the
10 cross member.

11 6. The latch wire of claim 5 further comprising a first collar
12 disposed between said tapered portion and said end portion of each leg, said first
13 collar limiting the length of said legs protruding through holes provided in the cross
14 member.

1 7. The latch wire of claim 6 further comprising a second collar
2 engaging a surface of the cross member on a side opposite the first collar.

1 8. The latch wire of claim 6 wherein said first collar extends
2 radially outward a distance greater than the diameter of the end portion.

1 9. The latch wire of claim 6 wherein said first collar is a
2 shoulder adjacent the base of the tapered portion.

1 10. The latch wire of claim 5 wherein said end portions of the legs
2 are bent to extend into a channel between a seat cushion and a backrest of the seat
3 of the vehicle.

1 11. A method of manufacturing a restraint anchorage for a child
2 safety seat for an automotive vehicle, the method comprising:
3 providing a cross member and at least two mounting brackets attached
4 to the cross member;
5 providing at least one pair of wire forms to form at least one pair of
6 latch wires;

7 forming a constant diameter transverse latch bar portion between
8 spaced legs from each wire form; and
9 tapering each wire form in at least two locations to generate at least
10 two distinct tapered portions separated by the transverse latch bar portion.

1 12. The method of claim 11 wherein said forming comprises of
2 bending the wire form.

1 13. The method of claim 12 wherein said forming comprises
2 bending the wire form in at least two spaced locations.

1 14. The method of claim 11 wherein said tapering comprises
2 reducing the diameter of a middle portion of the at least one pair of wire forms.

1 15. The method of claim 14 wherein said reducing is done by
2 swaging.

1 16. The method of claim 11 wherein said tapering comprises
2 gradually expanding the diameter of each tapered portion of the at least one pair of
3 wire forms.

1 17. The method of claim 16 wherein said expanding is done by
2 cold heading.

1 18. The method of claim 11 further comprising collaring to form
2 a first collar adjacent each tapered portion.

1 19. The method of claim 18 further comprising attaching each
2 pair of latch wires to the cross member by inserting end portions into holes provided
3 in the cross member up to a point where each first collar engages a first surface of
4 the cross member.

- 1 20. The method of claim 19 further comprising forming a second
- 2 collar on each end portion engaging a second surface of the cross member on a side
- 3 opposite the first collar to secure each pair of latch wires to the cross member.